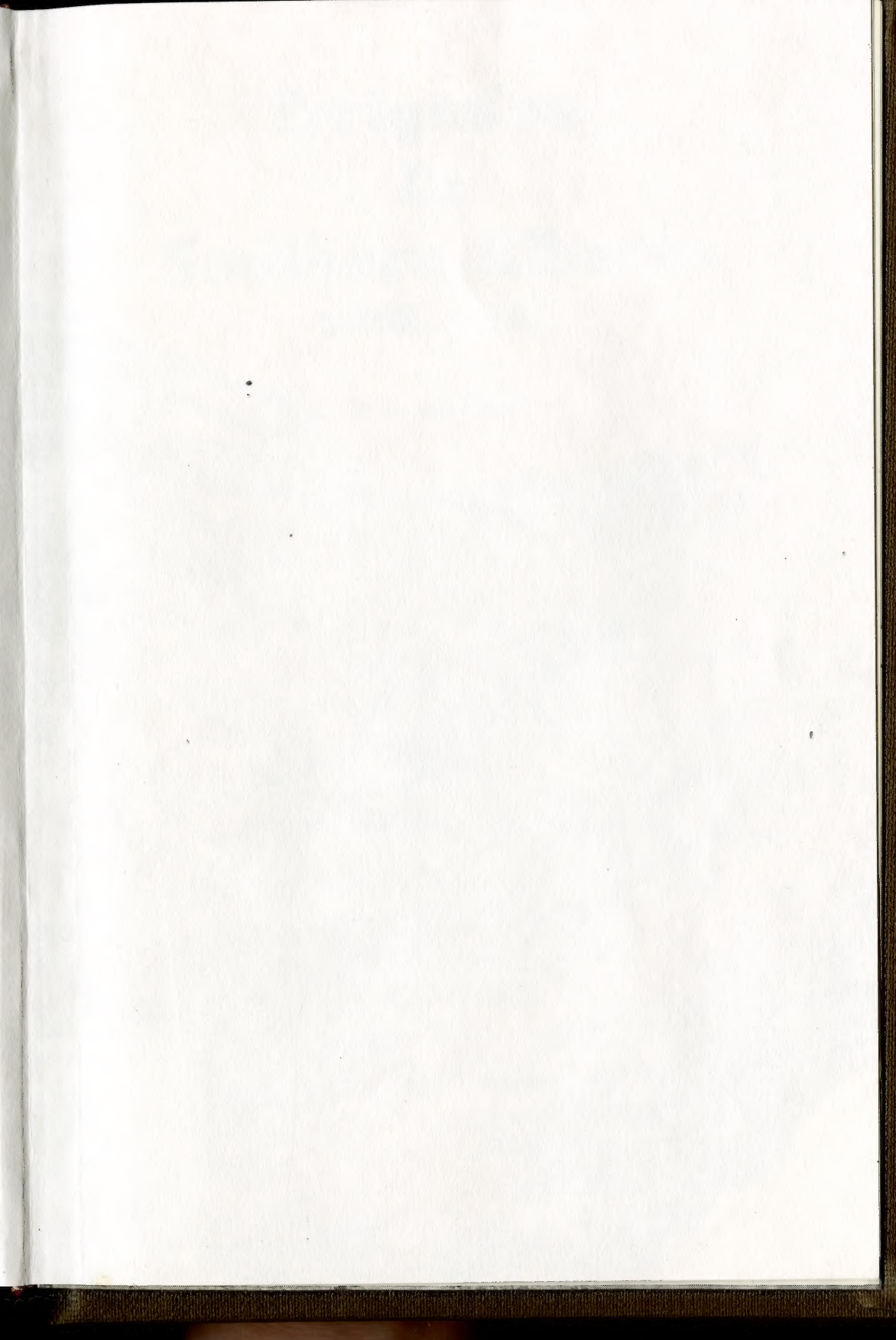


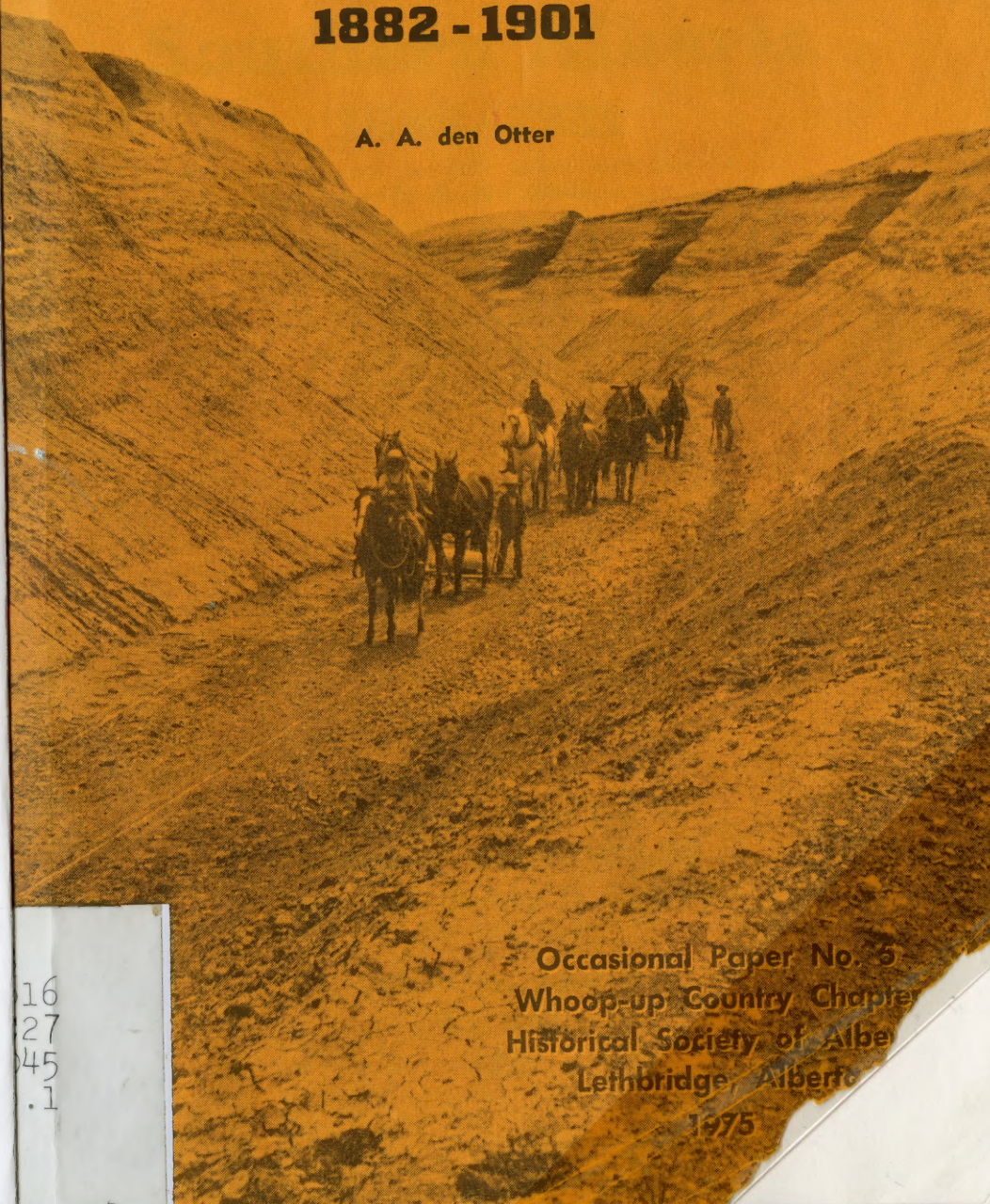
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Irrigation In Southern Alberta 1882 - 1901

A. A. den Otter



Occasional Paper No. 5
Whoop-up Country Chapter
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Lethbridge, Alberta

1975

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ACKNOWLEDGEMENTS

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We are grateful to the Glenbow-Alberta Institute, Calgary, Alta., for permission to reproduce the centre map and to the Sir Alexander Galt Museum, Lethbridge, for permission to use the remaining illustrations.

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Irrigation In Southern Alberta 1882 - 1901

A. A. den Otter

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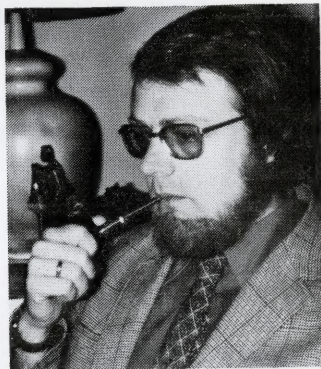
Andy Albert den Otter was born in Rotterdam, Holland, in 1941, and is a Canadian Citizen. He was educated in Dordt College, Sioux City, Iowa, where he obtained a B. A. degree, the University of Alberta, Edmonton, where he obtained his M.A., and was a Special Student at Vrije Universiteit, Amsterdam, Holland, in 1967-68. Recently he completed his thesis and, at an early convocation of the University

Alberta, will be awarded a Ph. D. in History from that institution.

He received a number of awards during his university career including Teaching Assistantships at the University of Alberta, in 1965-67 and 1968-71, Netherlands Government Fellowship in 1967-68, Vrije Universiteit Bursary in 1967-68, J. S. Ewart Memorial Travel Grant in 1971, and a Canada Council Doctoral Fellowship in 1973. Presently he is an Assistant Professor, History Department, Memorial University of Newfoundland, St. John's, Newfoundland.

Early in his career, Mr. den Otter formed an interest in coal mining in Alberta, particularly in the social impact of the industry. This led to an interest in the Galt enterprises of Southern Alberta, enterprises that were built on the exploitation of the coal resources along the Belly River. His Ph. D. Thesis was entitled "Sir Alexander Galt and the Northwest: A case study in entrepreneurialism on the frontier". Other publications on the Galt coal interests included "Steamboats on the Belly", *Alberta Historical Review* XX (Winter, 1972), pp. 1-5; "Sir Alexander Tilloch Galt, the Canadian Government and Alberta's Coal", *Canadian Historical Association, Historical Papers*, 1973, pp. 21-42.; and "Railways and Alberta's Coal Problem; A Historical Perspective", *Western Canadian Studies Conference* 1974.

His interest in the Galt enterprises led to an interest in the irrigation projects. This in turn led to the writing of "Irrigation and the Lethbridge News", *Alberta Historical Review* XVIII (Autumn, 1970), pp. 17-25, and to "Irrigation in Southern Alberta, 1882-1901" which appeared first in the *Great Plains Journal* XI (Spring, 1972), pp. 125-137.



IRRIGATION IN SOUTHERN ALBERTA, 1882-1901

ANDY A. DEN OTTER

A LAVISHLY ILLUSTRATED PAMPHLET circulated throughout Canada, the United States, and Europe in 1900, extolling southern Alberta's mildness of climate, length of growing season, and fertility of soil.¹ The advertisement listed the virtues of irrigation: simplicity of application, controlled moisture, guaranteed crops, and continual fertilization. It assured prospective settlers that because of the newly completed railway through Crowsnest Pass in the Canadian Rockies, a large market would be available in the mining regions of the Kootenays, an area then being supplied by Manitoba and the United States.

As an indication of the cost of living, the circular promised that a two-room house could be built for \$150, and that the government of the territories would provide schools and pay 65 to 70 percent of teachers' salaries. The publisher of this brochure, the Canadian North West Irrigation Company, proposed to sell parcels of land in this irrigated haven at a minimum of \$5 an acre and rent water rights at \$1 an acre per year.² As the clinching argument, the company pointed out that a local mining concern, the Alberta Railway and Coal Company, employed 800 men, and "as this Company works in harmony with the Canadian North West Irrigation Company, opportunity is presented for employment to early settlers in the mines and on the railroads at such periods of the year when farming operations are at a standstill."³

The region the irrigation company planned to convert into a lush garden spot was the western segment of the Palliser Triangle located in southern Alberta, a flat and treeless expanse of bunch grass, gouged by many deep coulees and rivers, a territory blessed with fertile soil and a warm climate but cursed with periods of insufficient rainfall and hot, dry winds. This semiarid, open country, while unsuitable for crop farming, was ideal for grazing and thus a vigorous ranching industry had been established. The Canadian North West Irrigation Company held vast tracts of land in this district and if it wanted to realize substantial profits on land sales, it would

have to convert the region's economy from ranching to mixed farming. The key to this policy was irrigation.

Before 1900 the urban center of southern Alberta was Lethbridge, a town created by the coal mines of the North Western Coal and Navigation Company. Considerable pressure in support of irrigation emanated from this settlement. Its newspaper tirelessly argued year after year that irrigation was essential for the development of southern Alberta and that the Canadian government and the citizens of Lethbridge should do everything in their power to facilitate the speedy execution of large-scale irrigation plans. Although the *Lethbridge News* emphatically reiterated the belief of most Canadians that private industry should finance any irrigation schemes, it also felt that the government as the largest shareholder in the territory should be prepared to soften the financial risks involved in experimental irrigation projects. The basic thrust of the editorials in the *News* was that the Dominion government, as owner of all crown lands, had a far greater interest than any private corporation in a plan which would increase land values. At the same time the paper argued that any increase in settlement caused by immigration would increase production and consumption and thus augment excise and customs returns.⁴

Citing William Pearce of the Department of the Interior, the *News* argued that once irrigation had been applied successfully, people would overcome their hesitation and begin to employ the abundant rivers and streams of southern Alberta for irrigation purposes. For more than seven years the editor of the *News*, E. T. Saunders, tirelessly reasoned that the government of Canada should bear the costs of proving irrigation possible. Government surveyors, he wrote, should make metrological observations, plot the level and contour of the land, and measure the flow of streams and the amount of water available.⁵ This step, while initially expensive, was most essential because careful studies of needs and costs plus detailed over-all plans would prevent costly and inefficient conglomerations of haphazard ditches. The government, which had definite financial interests in this region, must bear the cost of the survey and once this had been completed, private industry should finance the construction of the various irrigation projects.⁶

As well as pointing to the financial stake which the government had in southern Alberta, Saunders claimed that irrigation ditches were as important as railway tracks. Just as the government had aided the railways, so it should help finance irrigation projects. If irrigation could be made profitable, then settlers would stream in and railways would become paying propositions. Saunders incessantly hammered away at this theme and constantly castigated the government for failing to see this point. In one instance he sighed, "The present administration appear, however, to be either too blind to see or too stupid to recognize this."⁷ Throughout the

years the editor reiterated that, "we ask this not merely for our own advantage but for the general good of the country, which is deeply interested in the prosperous building up of this portion of the Dominion. We ask for equal treatment and frank consideration of our wishes."⁸

In the meantime efforts were being made to initiate irrigation projects in southern Alberta. Small-scale irrigation ditches had been completed as early as 1877 near Calgary, and 1882 on the Belly River. In 1887 some Mormons migrated from Utah to Alberta and introduced their irrigation skills to their new homeland. In 1889 Charles Ora Card, founder of the settlement at Cardston, built ditches to water some 800 acres of farm land in or near his settlement. Still other small works were completed in the McLeod district where the McLeod Irrigation Company became the first such chartered company in southern Alberta. Large-scale and efficient irrigation works, however, were still a thing of the future.

The late 1880's were unfruitful for the irrigation interests because western Canada was languishing under the competition of the American West which offered more fertile lands, a more favorable climate, better transportation, and a larger market. While John A. Macdonald's Conservative administration had promised that the Canadian Pacific Railway would flood the West with settlers, the expected inundation never materialized. The land boom of 1883 died out quickly and the flow of migrants remained negligible for another decade. Under these circumstances senior government officials were fearful that the clamor for irrigation would produce the false rumor that the Northwest contained only arid lands and such talk would scare away prospective settlers. Consequently the government toned down all suggestions for irrigation made by local boards of trade or regional government officials, turning a deaf ear to demands for assistance to irrigation.

The long period of severe drought which struck southern Alberta in the early 1890's soon forced the government to reconsider its policy, and in 1892 William Pearce of the Department of the Interior was summoned to Ottawa to draw up an irrigation policy which would alleviate the hardships experienced by the frontier farmers. One year later J. S. Dennis, chief inspector of surveys, was ordered to study various irrigation projects in the western United States in order to make recommendations for the pending legislation. In 1894 the Canadian government passed the Northwest Irrigation Act which vested water rights in the crown and provided for the controlled use of water for various functions. That same year it instructed Dennis to survey the water resources of the Northwest. The administration, however, still made no move to further assist any proposed irrigation schemes then in existence.

The first large-scale irrigation project in southern Alberta began in 1893 when the North Western Coal and Navigation Company merged with the

Natural Prairie Grass



Kimball Headgates 1900



Alberta Railway and Coal Company to form the Alberta Irrigation Company. The capitalization of these two companies had been organized by Alexander T. Galt, who had carried out successful land settlement projects in Ontario, had helped build the Grand Trunk Railway, and had been instrumental in the confederation of the British North American Colonies in 1867. In the early 1880's, his son Elliot T. Galt, while working for the Department of the Interior had learned of the coal fields surrounding present-day Lethbridge and he immediately persuaded his father, now Canadian High Commissioner in London, to develop these deposits. In 1882 Sir Alexander, using his many contacts in the imperial capital, succeeded in forming the North Western Coal and Navigation Company. In order to transport its product, this company built a narrow gauge railway from Lethbridge to the mainline of the Canadian Pacific near Medicine Hat. Several years later Galt formed the Alberta Railway and Coal Company to construct a railway to the expanding market in Montana.⁹ The Canadian government rewarded both these railway ventures with land grants and thus when the companies merged, the Alberta Irrigation Company owned a land parcel of more than a million acres.

Since all this land was worthless without settlers to buy it, the Galts became interested in settling southern Alberta. In their opinion, irrigation was the essential ingredient for a successful settlement scheme. The new company, therefore, turned to the Mormons and their leaders Charles Ora Card and John W. Taylor, offering to sell the Mormons land for one dollar an acre if they agreed to dig an irrigation canal.¹⁰ They agreed and irrigation seemed to be on its way.

The immediate success of the irrigation project was hindered by two obstacles. First, the Mormon church would not assume the whole burden of the scheme and cancelled the contract in 1895. Secondly, the custom of granting alternate sections of land prevented efficient irrigation because the company would have to dig its canals through government, school, and private lands as well as through its own. Company officials argued that large expenditures by them would automatically increase the value of these properties.

As a result of these obstacles the company charter expired in 1896, three years after it was issued, without any work having been done. The company agent in Lethbridge, C. A. Magrath, proposed to the Department of the Interior that his company would be prepared to offer a contract on the basis of a departmental survey of the proposed irrigation system and that this contract be evidence of the company's intent to irrigate.¹¹ Although J. S. Dennis, deputy commissioner in the Department of Public Works of the Northwest Territories, advised Magrath not to seek an extension of the charter because the term of the House of Commons was about to expire and a general election had been called, the company did seek the renewal

and obtained a certificate which authorized it to construct an irrigation system within ten years.¹²

At this stage several events occurred simultaneously, making the irrigation scheme attractive. The spectacular gold discoveries in Africa in mid-decade halted the decline of wheat prices in America and from 1893 on they rose steadily. At the same time free land in the United States ran out and settlers began to look to the Canadian West. Agriculture looked profitable there because the danger of early frost had been conquered by the development of early maturing grain, and wheat could now be shipped to distant markets by means of the recently evolved devices such as elevators, wheat pools, and grain ships. Wheat suddenly became Canada's great commodity and western lands began to attract farmers. Aided by the new era of optimism and economic buoyancy, the Canadian government initiated a successful recruitment program for American, British, and European immigrants, a policy which transformed the trickle of immigrants into a flood. These new settlers demanded land, and as a result the proponents of irrigation gained more solid ground for their arguments that all available arable land should be put into immediate production to accommodate the many newcomers—even if irrigation were deemed necessary.

Caught up in this new optimistic spirit, irrigation made significant progress during 1896. In that year the Liberal party gained office and Clifford Sifton became the minister of the interior. C. A. Magrath, himself influential as the land commissioner for the Galt interests, wrote "It is but fair to say that the impetus given to irrigation development in southern Alberta came from Clifford Sifton."¹³ The minister allowed the company to consolidate its holdings into large blocks, refunded its survey dues, and promised more support. The mere evidence of government support and the permission to take land in solid blocks prompted Elliot Galt to seek financial backing in England, a task which met with success. His work was helped by the completion of a branch line of the Canadian Pacific Railway through Crowsnest Pass. This line opened the interior of British Columbia to prairie produce.¹⁴ In the summer of 1897 C. A. Magrath secured G. G. Anderson, an irrigation engineer from Denver, Colorado, to make a feasibility study of the company's irrigation scheme. Later that year Anderson reported that it would be practical to divert the St. Mary's River for irrigation purposes.

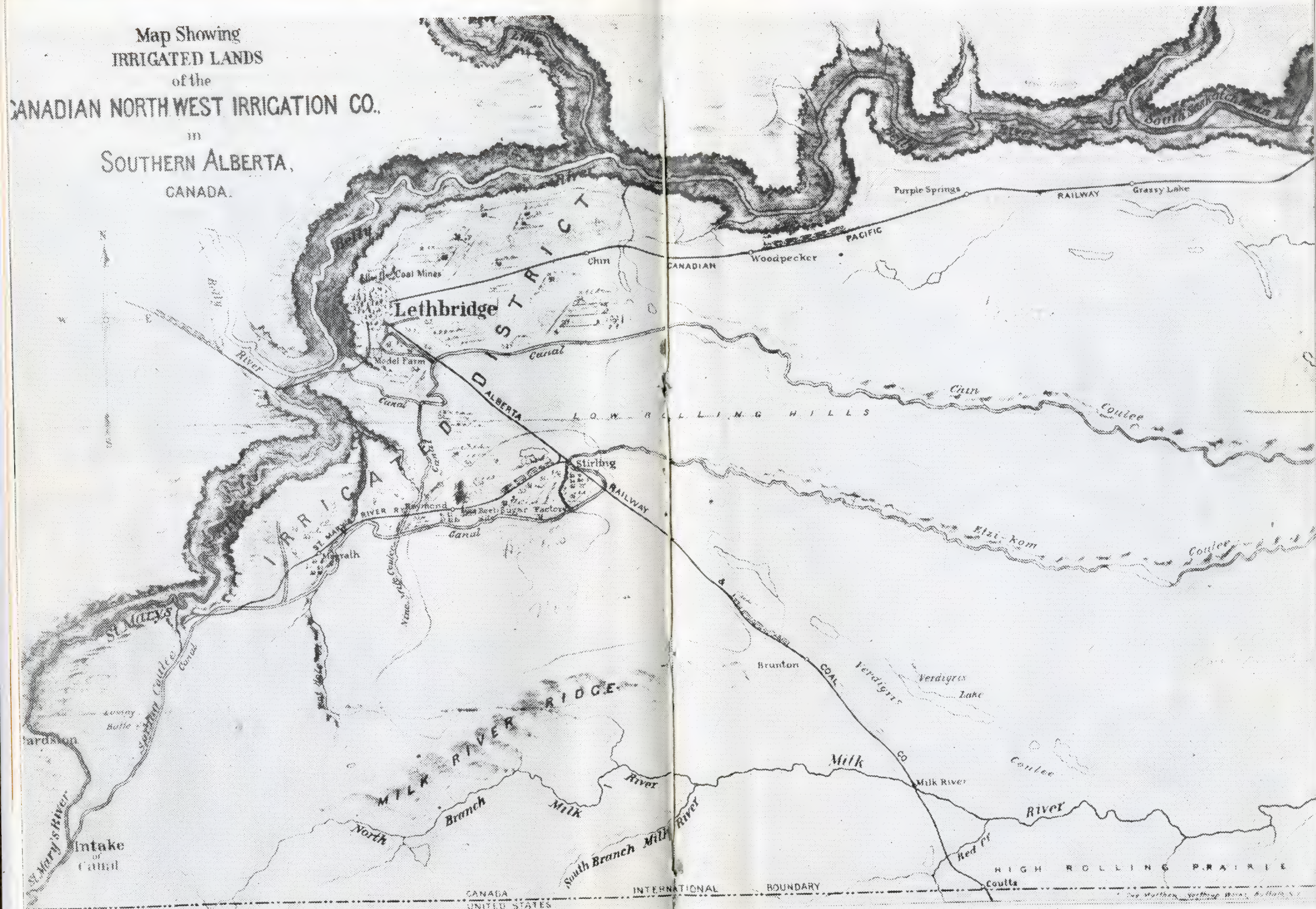
Once again Magrath approached the Mormons and this time was able to work out a suitable arrangement. They agreed to supply all the labor to dig the irrigation canal in return for a payment of one-half in cash and one-half in land, the land with water rights being evaluated at \$3 an acre. In 1898 the C.P.R. began subsidy payments to the Alberta Irrigation Company of \$5,000 every six months to a total of \$100,000. With these arrange-



Canal under construction 1899 - 1900



Map Showing
IRRIGATED LANDS
of the
CANADIAN NORTH WEST IRRIGATION CO.,
in
SOUTHERN ALBERTA,
CANADA.





Section of Main Canal
showing depth of cut

ments the work could begin and on August 26, 1898, Ora Card, the Mormon leader, plowed the first furrow for the ditch.¹⁵

The plans of the Alberta Irrigation Company called for a canal to be dug from a point on the St. Mary's River, close to the international boundary, angling northeastward passed the present-day towns of Magrath and Stirling. A long canal was necessary because the river valley in the area to be irrigated was 300 feet deep. Since the company wanted to spare the high cost of pumping stations it had to seek a site far upstream which lay above the elevation of the lands to be irrigated. The whole scheme, however, did not include Lethbridge, and the *Lethbridge News* quickly pointed out this serious omission. Its editor launched an eloquent campaign aimed at including Lethbridge in the irrigation project.¹⁶ The town council recognized the great value of lengthening the irrigation canal into Lethbridge and promised to contribute \$30,000 to guarantee the delivery of water to 20,000 acres in and around the town. The citizens of Lethbridge approved the necessary by-laws in the summer of 1897 and thus a branch line would be dug to Lethbridge.

In the late summer of 1898, workers set out to excavate 115 miles of canals, including the Lethbridge branch of thirty-two miles and the Stirling branch of twenty-two. No steam shovels nor dredges were used to move the estimated 1,121,000 cubic yards of dirt; instead the job was done completely with teams and several hundred men.¹⁷ Since no concrete was used, over a million feet of lumber was consumed in erecting structures such as sluiceways, gates, and buildings. By the end of August 1899 only three miles of construction remained between Magrath and Stirling. Most of the subcontractors of this section were finished and putting up hay for the winter. Elsewhere more than a hundred men were still at work while 300 others were just resuming work after a short stoppage caused by a cost dispute.¹⁸

The two settlements of Magrath and Stirling, later to flourish beside the canal, were still only small and rugged tent towns. Some families even lived in dugouts. The men were simply too busy earning money and land by working on the canal to take time out to build houses—and, too, lumber was scarce.¹⁹

In the summer of 1899 the Alberta Irrigation Company changed its name to the Canadian North West Irrigation Company. E. T. Galt was named president of the reorganized firm and his head office was placed in Montreal.²⁰ Ironically enough, the irrigation project was seriously hampered by torrential rains and floods. In 1898–1899 the countryside nearly drowned during one of the region's wet cycles. The deluge turned some creeks and coulees into raging rivers and badly eroded the freshly dug canals. One pioneer wrote, "On June 17th [1899] rain fell and soon became a deluge and for two weeks it poured without stopping. The canvas of the tents

Lethbridge Flume
1900



N.W.M.P. Garden
Lethbridge 1901
looking North



could no longer shed water and it poured through the beds and despite the tubs, pans and all else used to try to stay it."²¹

Despite these difficulties the contractors managed to complete the 115 miles of canals. On July 4, 1900, G. G. Anderson wired C. A. Magrath to tell him, "Main Canal is completed. I will turn water on in an hour and will report day by day";²² on July 9, he wired, "Water passed Spring Coulee. Drop 3 o'clock this afternoon. Everything in good shape from Stirling Division water past middle Coulee flume."²³ Later in the month water flowed into Lethbridge, even though this section was not officially opened until September 1900 by the Governor General of Canada, Lord Minto.

The Canadian North West Irrigation Company was now ready to sell its land to prospective settlers. In 1901 it authorized E. T. Galt to sign water agreements with settlers,²⁴ and at the same time embarked upon an extensive advertising campaign in eastern Canada, the United States, and Europe. The company published a brochure which labeled southern Alberta as the "Colorado of Canada," and had prominent settler Levi Harker claiming that he had broken thirty acres in 1899, seeded four of them, and the following year had broken 420 acres from which he harvested 10,000 bushels of grain, a low yield due to lack of water. Once irrigated, however, harvest from the land would be plentiful.²⁵

The Department of Public Works helped by preparing a special pamphlet, and the Winnipeg *Free Press* and Montreal *Herald* published descriptive articles.²⁶ The company advertised at the Stockmen's Convention in Salt Lake City and sent photographs for exhibition in Europe while the Canadian government handed out pamphlets at the Pan-American exhibition.²⁷ The Reverend Charles McKillop of Lethbridge, while on vacation in eastern Canada, tried to divert the stream of immigration to southern Alberta by placing advertisements in several Ontario newspapers.²⁸ The promotional literature stressed the certainty of good crops with irrigation. "The farmer is in fact his own rainmaker."²⁹

Ironically, no one needed a rainmaker. The North West Irrigation Company had built its irrigation system in a strange climatic area. Until the mid-eighties the region had been considered arid. Ranchers had begun to irrigate their hayfields, but when the dry spell had been followed by a wet period, they abandoned their ditches. In the mid-nineties another dry spell led to renewed agitation for irrigation, but when the Galts finally finished their system another wet season began. In 1902 three great floods deluged the region, washed out much of the canal system and put it entirely out of commission. Prospective buyers were quick to point out that the company needed to build drainage rather than irrigation ditches. Sales were extremely slow and by the end of December 1901 the company had signed only 145 water agreements, and because of the constant rain, those who did make

Flume at Stirling



Wooden Bridge
over Canal
1900



agreements signed only for partial irrigation schemes.³⁰

An article carried by the Great Falls *Daily Tribune* reported dissatisfaction among settlers in southern Alberta. The article claimed that while Mormons might be able to live there, an "ordinary man" could not because early frosts, snow, and floods caused total crop failures. Consequently, most of the people who had settled there were now ready to leave.³¹ An editorial written a week later in the same newspaper lambasted the previous article as a gross exaggeration;³² nevertheless, someone had touched a sore spot.

These pessimistic notes did not mean that there was no progress whatsoever, but only that the company's hopes of a quick return for their investments were dashed. The *Lethbridge News* carried a very optimistic report by J. S. Dennis which pointed out that the Lethbridge area was undergoing great changes. Dennis wrote that "thriving villages are now found at Stirling and Magrath on the line of the canal where two years ago, not a single house existed, and the whole district traversed by the canal is rapidly becoming dotted with farms which, in a short time will provide striking object lessons as to what irrigation will do towards the production of fine farms and successful farmers."³³

The Canadian North West Irrigation Company still injected more money into the sluggish southern Alberta economy. In 1901 the company assisted Jesse Knight in financing a sugar factory at Raymond. Knight received an interest in 60,000 acres of land in and around Raymond and an option on 200,000 acres of range land at only \$2 an acre. In the late summer of 1901, Knight plowed 3,000 acres of virgin soil with eighty teams of horses to prepare for next year's crop.³⁴ The sugar factory commenced production in 1903 and ran successfully for several years, but due to a lack of sugar beets it ceased production in 1917.³⁵ The irrigation company also conceived the St. Mary's River Railway Company which constructed a railway running forty-seven miles southwest from Stirling to Cardston. Even though there was hardly a shack along the line yet, the corporation felt that the road, completed in 1902, was necessary "to provide easy access to the newly irrigated lands."³⁶

Despite all the efforts by the Canadian North West Irrigation Company, the Lethbridge area grew more slowly than some other regions in the territories. Part of the problem was the intermittent wet years in a usually semiarid territory. Yet all that was needed to establish irrigation in southern Alberta was the usual dry spell such as the one which had prompted Parliament to consider irrigation six years earlier. When such a dry period came the area was eventually settled.

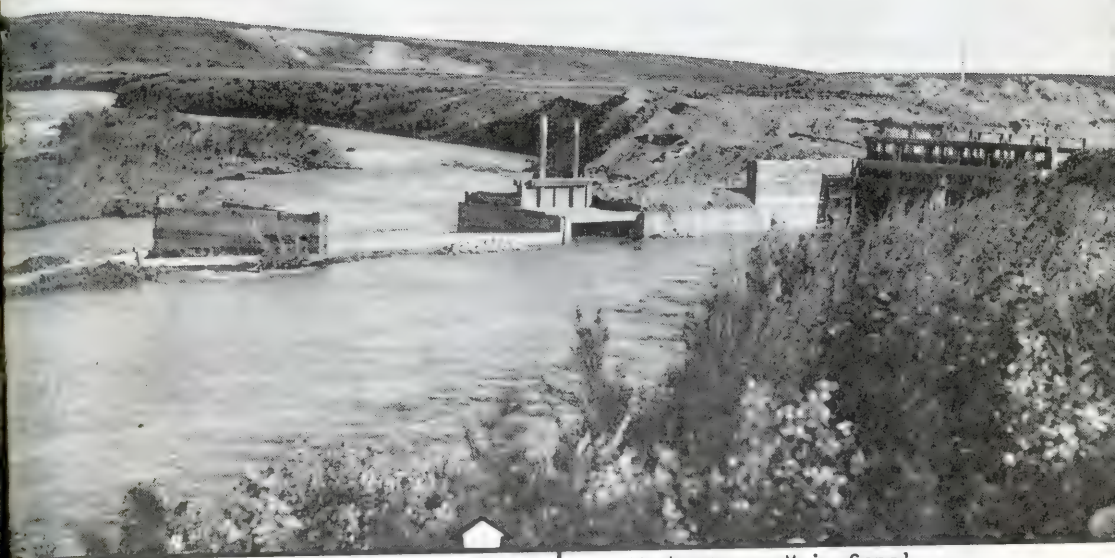
Irregular rainfall was not a problem confined to the Lethbridge area alone; much of the remaining southwestern Canadian plains suffered under the same handicap. All across the grasslands prolonged periods of drought,



Breaking Sod 7" deep
in June 1901

Breaking first sod at
Raymond Sept. 17 1901





Kimball Headgates reconstructed
after flood of 1902

Washouts on Main Canal
after flood of 1902



with hot searing winds which dried and cracked the prairie soil, alternated with soggy wet spells and driving rains which swelled streams and flooded low-lying lands. Thus for centuries vegetation hung in delicate balance: while grasses either flourished or withered with the modulating weather, rainfall was always too scarce to permit the growth of trees but sufficient to prevent desert conditions. Many of the settlers who invaded the West were bitterly disappointed with the capriciousness of nature which prevented profitable cultivation of the rich soil.

Yet the Lethbridge tablelands offered unique advantages over neighboring areas. The proximity of the snow-capped Rocky Mountains ensured a plentiful supply of moisture. Two large rivers carried the water onto the plains and many streams and coulees could be utilized as natural water channels. The flatness of the land permitted water to be delivered to farm fields more simply and cheaply than in the rolling and hilly country to the north and east. The Lethbridge irrigation district had several natural advantages which helped to make it successful. The irrigation projects of the Canadian Pacific Railway, a hundred miles to the north, for example, proved to be more costly, while projects to the east of Lethbridge failed consistently. Both sites lacked one or more of the natural advantages of the Lethbridge plan.

The Canadian North West Irrigation Company took full advantage of these natural features to bring water to its semiarid land grants. Yet before it could implement the irrigation scheme, government aid was needed. The government of Canada feared that the adverse publicity created by a call for irrigation would slow the flood of American and European settlers into the unsettled West, and thus refused to become actively involved. With tenacious persistence company officials argued with the bureaucrats and politicians, trying to prove that irrigation was not only feasible but would prove to be a boon to settlement. Finally, when at the turn of the century the fertile lands of southern Alberta were needed to appease the land-hungry settlers, the administrators listened and began to treat canal excavation like railway construction in the past. Irrigation was now deemed to be in the public interest and worthy of government support.

Encouraged by government incentives, Elliot Galt and C. A. Magrath farsightedly began to build the irrigation works. They advertised extensively for settlers, and built railways, reception centers, and towns to accommodate the immigrants. Through many years of persistent efforts, these two men transformed their properties from dry, short-grass plains to attractive, fertile farm lands. Galt and Magrath thereby initiated agricultural settlement in southern Alberta and once their company had shown irrigation to be successful, other companies were quick to follow. Within years the Canadian Pacific Railway Company began to irrigate a large portion of its holdings in southern Alberta. The Canadian North West Irrigation

Company completed the first major irrigation project on the Canadian prairies and set an example for others to follow.

NOTES

1. Canadian North West Irrigation Company, *Irrigated Lands in Southern Alberta* (Winnipeg: Storel Co., 1900).
2. The company actually sold forty-acre parcels of land at the minimum of \$8 an acre, with an option on another forty adjoining acres on the same terms after one year. Included in the sales contract were clauses which required a settler to reside on the land six months of each year for two years and cultivate ten acres in the first year and twenty in the second. See L. P. Burns, "The Alberta Railway and Irrigation Company, 1893-1946," History of Irrigation in Western Canada, History of Agriculture (A Glenbow Foundation Research Project, 1959, typewritten, bound manuscript), p. 9, Glenbow Alberta Institute, Library and Archives, Calgary, Alberta (hereafter cited as Burns Collection).
3. Canadian North West Irrigation Company, *Irrigated Lands*, p. 12.
4. *Lethbridge News*, March 15, 1888; August 29, 1889; and November 20, 1889.
5. *Ibid.*, November 20, 1889.
6. *Ibid.*, May 7, 1890.
7. *Ibid.*, August 10, 1892.
8. *Ibid.*, September 28, 1893.
9. Oscar Douglas Skelton, *Life and Times of Sir Alexander Tilloch Galt* (Toronto: Oxford University Press, 1920), pp. 549-69.
10. James B. Hedges, *Building the Canadian West: The Land and Colonization Policies of the Canadian Pacific Railway* (New York: Macmillan Co., 1939), p. 171.
11. C. A. Magrath to J. S. Dennis, March 2, 1896, Burns Collection.
12. *Canada Gazette*, March 4, 1896.
13. C. A. Magrath, *The Galts, Father and Son: Pioneers in the Development of Southern Alberta* (Lethbridge: *Lethbridge Herald*, 1936), p. 15.
14. In the *Montreal Herald*, February 11, 1899, Galt stated that his company had considered irrigation before, but had to wait until Crowsnest Pass opened and provided the Lethbridge area with a market.
15. Hedges, *Building the West*, p. 173. See also Melvin S. Tagg, "A History of the Church of the Latter-Day Saints in Canada, 1830-1963" (Ph.D. diss., Brigham Young University, 1963), p. 179.
16. See for examples, *Lethbridge News*, December 1, 1899; March 9, 1899; and March 30, 1899.
17. Sam G. Porter and Charles Raley, "A Brief History of the Development of Irrigation in the Lethbridge District" (Manuscript, Lethbridge Public Library, March 1925), p. 18.
18. *Cardston Record*, August 25, 1899.
19. *Ibid.*, July 9, 1900.
20. Bulletin, Canadian North West Irrigation Company, June 24, 1899, Burns Collection.
21. Anna Brandley Ostlund, "Theodore Brandley" (Typewritten manuscript, 1960), Glenbow Alberta Institute, Library and Archives, Calgary, Alberta.
22. Telegram, G. Anderson to C. A. Magrath, July 4, 1900, contained in Charles Raley, "A Scrapbook Compiled in the Office of the Alberta Railway and Irrigation

Company, 1898-1956," Glenbow Alberta Institute, Library and Archives, Calgary, Alberta.

23. Ibid., July 9, 1900.

24. Memorial, Canadian North West Irrigation Company, January 7, 1901, Burns Collection.

25. Canadian North West Irrigation Company, "The Colorado of Canada, Irrigated Lands, Southern Alberta, Canada" (November 22, 1900), Burns Collection.

26. The Montreal *Herald*, February 11, 1899, in commenting on the "Industrious Mormons" who are settling in southern Alberta assured its readers that Alberta would not become a Canadian Utah because "the establishment of the Public School System among the Mormons is a good sign. The Public School is the hopper into which the foreign element will pass, and a good [Canadian] . . . emerges. It will be so, no doubt, with the Mormons here."

27. See for example, Burns Collection, July 30, 1900.

28. See for examples, *Pembroke Standard*, May 31, 1899; *Pontiac Advance*, June 2, 1899; *Eganville Enterprise*, May 31, 1899; contained in Charles Raley, "A Scrapbook."

29. Canadian North West Irrigation Company, *Irrigated Lands in Southern Alberta*.

30. See Burns Collection, December 28, 1901.

31. Ibid., May 16, 1903.

32. Ibid., May 27, 1903.

33. *Lethbridge News*, May 11, 1901.

34. Magrath, *The Galt*, p. 17.

35. Porter and Raley, "Development of Irrigation," p. 26.

36. Skelton, *Sir Alexander T. Galt*, p. 567.

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DEN OTTER, A.A.
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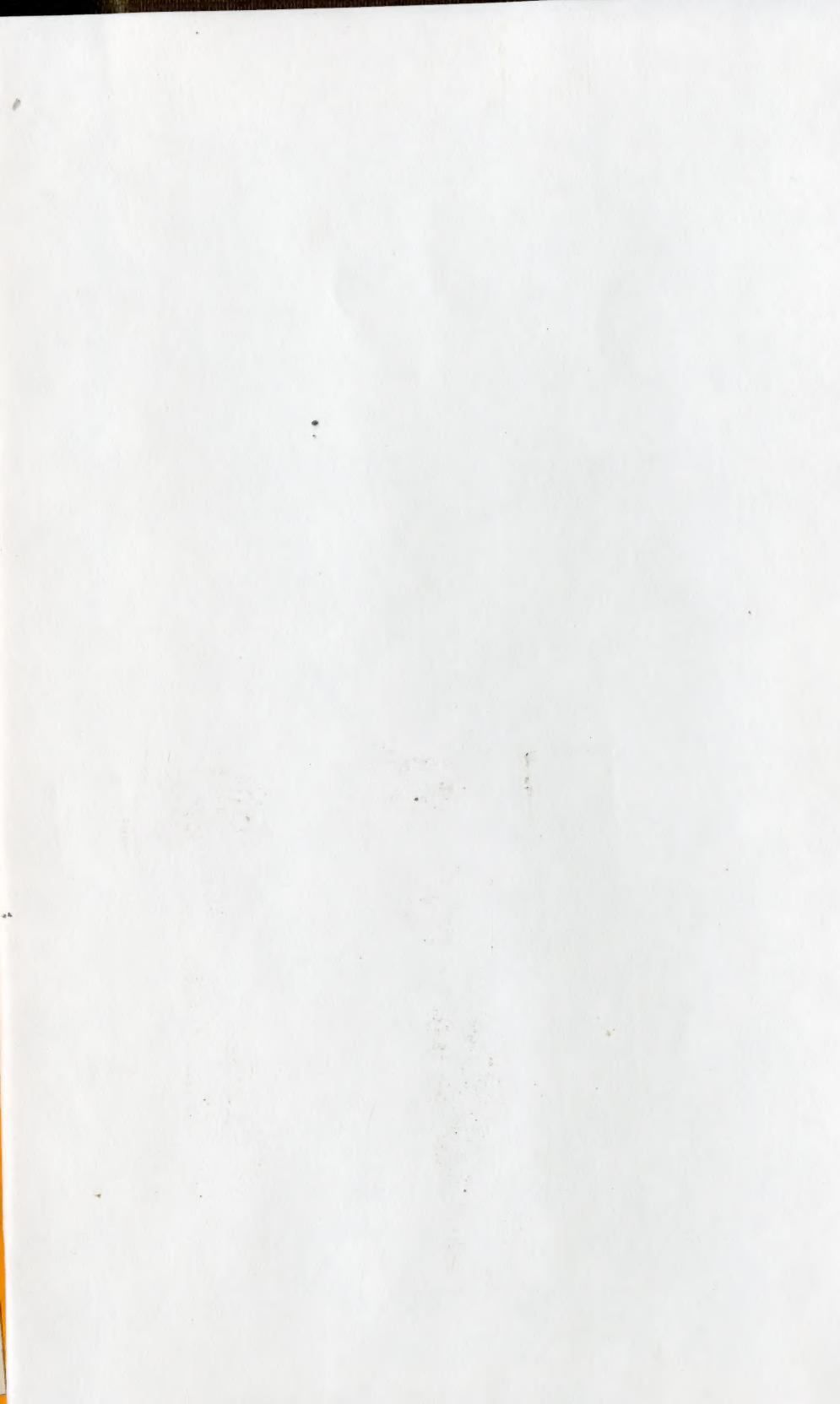
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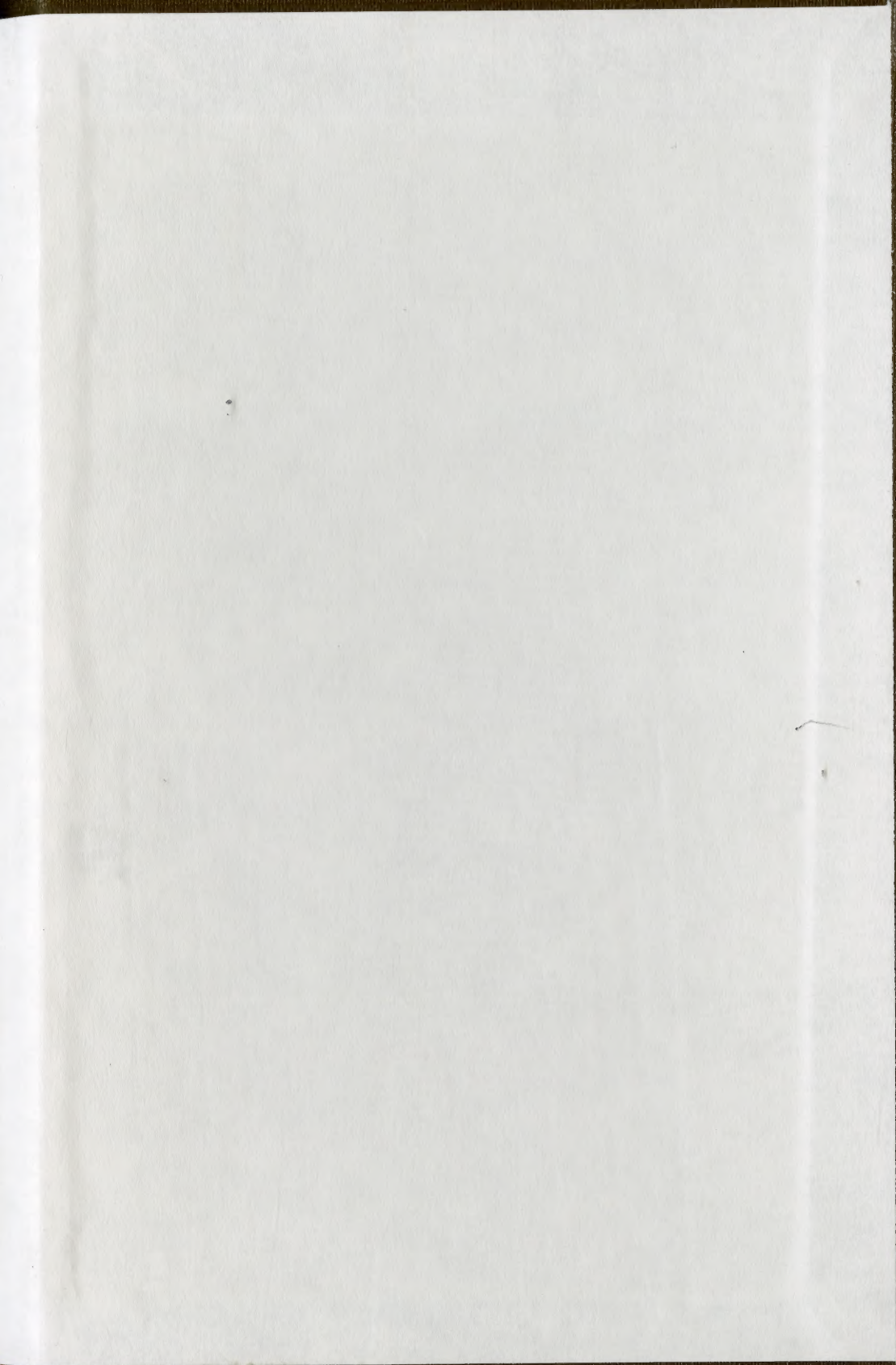
DEN OTTER, A.A.
IRRIGATION IN SOUTHERN ALBERTA
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